DOCUMENT RESUME

ED 254 107 FL 014 911

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TITLE Videotape vs. Audiotape for Listening Comprehension Tests: An Experiment.
PUB DATE 84
NOTE 8p.; In: Snyder, Barbara, Ed. Look Out World, Here We Come! See FL 014 904.
PUB TYPE Reports - Research/Technical (143) -- Journal Articles (080)
JOURNAL CIT OMLTA Journal; p47-53 1984

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Audiotape Recordings; College Second Language Programs; Comparative Analysis; *Dialogs (Language); Higher Education; *Language Tests; *Listening Comprehension; *Second Language Instruction; Spanish; *Videotape Recordings

ABSTRACT

A study to determine whether college students in first-, second-, and third-year Spanish courses who saw and heard dialogs between native speakers would score significantly higher on a listening comprehension test than those who only heard the dialogs had as its subjects 178 students randomly divided into two treatment groups. Twenty-seven dialogs, each containing items of varying degrees of difficulty and each less than one minute long, were videotaped for one group and the soundtrack was dubbed onto audiotape for the other group. The comprehension test consisted of 60 multiple-choice completion items in English. The statistically analyzed results indicated that students in the first- and second-year courses who saw the videotapes performed significantly better than those hearing the audio portion only. It is theorized that this occurred because the videotape provided more stimuli contributing to redundancy. Followup interviews indicated that students seeing the videotape may have had more interest and greater motivation to pay attention than those hearing the sound only. The test's ability to discriminate was about equal for audio- and videotapes, but teachers are cautioned to use discrimination indices only when using tests to rank students rather than when assessing progress. It is also suggested that if students do understand more of the videotaped version, they will feel greater success and incentive for developing their language skills. (MSE)

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ED254107

OMLTA Journal 1984

VIDEOTAPE VS. AUDIOTAPE FOR LISTENING COMPREHENSION TESTS: AN EXPERIMENT

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When the attention of foreign language teachers turns to evaluation of listening comprehension skill, it is not uncommon to assume that a standard format will be used for the test. This format almost always consists of spoken material played two or three times on an audiotape recorder. The tape may be heard through headsets, as in the learning resource center; or through a loudspeaker, as in the classroom. The students generally have to respond to a series of questions of the type used in objective tests, such as multiple-choice, true/false, and so on. While the material used in the listening tests may vary somewhat in content and objective, most listening comprehension tests have one common characteristic: the speaker is heard but never seen by the students.

Ducroquet (1) claims that listening comprehension tests "attempt to judge how well a subject listens in a foreign language, where 'listen' is taken literally and means strictly listen, and is only the result of hearing" (2). This attitude of "listen only" can be justified only in reference to the few occasions in real life that involve hearing alone. Such situations exist when one listens to a radio broadcast or a record, when talking on the telephone, or when listening to a conversation behind a closed door!

During classroom instruction, the foreign language educator transmits nonverbal cues. Not only are these cues available in most face-to-face conversations, but they are also present during the teacher-learner dialogue. Since one of the goals of second-language learners is to communicate in the real world using their newly acquired skills, foreign language teachers constantly strive to build "real world" environment into their programs.

The realism that is built into the teaching situations has necessarily become an important aspect of testing programs. Since there is such a great deal of information transmitted nonverally during real-life conversations, it seems logical to predict that a visual adjunct to tests of listening comprehension ability would increase the comprehensibility of aural material. With that increase in comprehensibility, the instruments should provide more reliable measures of student ability to comprehend natural spoken speech.

Furthermore, when one considers the fact that research into the role of nonverbal cues in the total communication process suggests that no full comprehension of oral communication is complete without consideration of the nonverbal cues, it seems

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most unreasonable to presume to test listening comprehension using audiotape, thus dismissing completely a whole host of clues to the meaning of the message transmitted. Jarvis (3) maintained that "there is a certain lack of realism inherent in presenting listening items wihout a visual dimension" (4). He further stressed that hearing spoken language, isolated from all other context, can appear as an academic exercise rather than as a simulation of a communicative situation which it is believed to be by many educators" (5). Rivers (6), on the other hand, though not totally opposed to the use of visual cues in listening comprehension felt that any reliance on a visual representation might mean that the student comprehends less well when left to depend on the ear alone. Specifically regarding the testing of listening comprehension with a visual dimension, she felt that it might prove very difficult to determine whether the student had actually comprehended the aural message or deduced it from the visual stimulus (7). Jarvis (8), however, pointed out that "rather than providing unnecessary clues, as some may claim, the visual restores clues which are unnaturally deleted in some purely auditory tests" (9).

By using videotape to restore the visual adjunct, the inclusion of gestures, facial expressions, and body language should add to the realism of the aural stimuli. Concerning the use of videotape for listening comprehension tests, Stallings (10) indicated that "one would expect that the presentation of a foreign language listening test would be more verisimilar (and involve the students more) than the presentation of the same material by audiotape" (11).

Related Research

Stallings conducted an experiement in which Form FB of the MLA French Listening Examination was administered via audiotape and videotape as part of the final examination for students enrolled in second-year college French courses. The experiment was conducted at the conclusion of both the first and second semesters. On neither occasion was there a statistically significant difference between the scores of the students tested by audiotape and those tested by videotape. It must be noted, however, that problems were encountered during the study that affected control over certain aspects of the study and threaten the internal validity of the experiment (12).

More recently, Jackson (13) designed an experiment to determine the effect of videotaped versus audiotaped interviews on the listening comprehension of foreign language students. He too focused on students enrolled in beginning college French courses. Jackson's hypothesis was that students who viewed a videotape would score significantly higher on a test of comprehension of the interviews than those who listened to the audio track of the same interviews. While problems regarding the test reliability

hampered an earlier experiment, the results of a second experiment supported his hypotheses.

The findings from Jackson's research, together with those obtained from the study discussed in the following sections, provide reliable evidence that the inclusion of a videotape adjunct to listening comprehension tests does indeed increase the comprehensibility of aural stimuli in a foreign language.

The Present Study

The present study was designed to determine whether college students in first-, second-, and third-year Spanish courses who saw and heard dialogs between native speakers of the language would score significantly higher on a test of their comprehension of material presented in the dialogs than students who listened only to the audio portion of the conversations.

The experiment was designed to treat each course level as a separate, independent experiment from the other levels, each with separate data analysis and interpretation. The subjects for each level were randomly divided into two sub-groups of equal size. Each sub-group was then randomly assigned to receive either the videotape or the audiotape treatment.

A total of 178 students enrolled in the first three years of college Spanish participated in the experiment. Four levels were actually involved since the first-year course is divided into two separate courses (i.e., first-semester, Beginning I, and second-semester, Beginning II), while the second (Intermediate) and third (Advanced) years are one-semester courses. Even though the experiment took place outside of class, all students in each of the courses participated as a natural consequence of being enrolled in their respective courses. Volunteerism, therefore, did not play a part in the study.

Twenty-seven dialogs portraying native Spanish speakers engaged in common, everyday activities and conversations were developed. The dialog situations were designed to be relevant to the interests of the students and to represent situations in which the students might conceivably find themselves. Because the dialogs would be seen and/or heard by students at different stages of instruction and of differing levels of experience in the language, an attempt was made to include items of varying degrees of difficulty corresponding to each of the first three years of language study. In order to reduce the importance of memory during the administration of the test, none of the dialogs exceeded one minute in duration, the shortest being approximately twenty seconds in length (14). The dialogs were videotaped and then the audio track was electronically dubbed onto audiotape in order to ensure that the sound tracks be identical.

The listening comprehension test itself consisted of sixty multiple-choice items of the completion type, based on information contained in the taped dialogs. Although many listening tests require students to listen to taped dialogs and then answer test items written in the target language, the present study used test items written in English. This was done to avoid the simultaneous testing of the reading skill in the foreign language. Items were written to focus on the general content of the conversations rather than on details which would test memory instead of communicative comprehension. The test item stems were recorded on the tapes following the corresponding dialogs. This was done in an attempt to prevent subjects from obtaining advance clues to the content of the tapes and subsequently listening for specific bits of information rather than focusing attention on the entire dialog. The possible responses were printed in the test booklet.

The Kuder-Richardson formula 20 was used to assess the reliability of the measurements. The reliability coefficients for the listening comprehension test for each course level and treatment group are presented in Table 1.

TABLE 1. Reliability Coefficients for Listening Comprehension Test by Course Level and Treatment Group

Level:	Beginning I	Beginning II	Intermediate	Advanced
Audiotape:	.943	.785	.839	.099*
Videotape:	.832	.932	.846	.314*

*All students in the Advanced group had near-perfect scores, thus eliminating variability among scores and resulting in poor reliability coefficients.

Two viewing rooms with seating capacity of forty persons each were used for the listening test administration. One of the rooms was equipped with a video cassette player and two wall-mounted television monitors. The other room was outfitted with a reel-to-reel audiotape player. (Reel-to-reel equipment was used in the audio-only treatment due to the higher quality sound reproduction it offers over typical audio cassette equipment.) The test was administered to all groups following identical procedures.

Data

The scores from each of the treatment groups were analyzed using the t-test. Results of those analyses are summarized in Table 2. As can be seen in that table, results of the t-test for the difference between means of the Beginning I groups showed a

TABLE 2. Descriptive Data and t-Test Results for Listening Comprehension Test Scores

Level	Treatment	n	Mean	SD	t
Beginning I	Audio	25	21.12	11.45	3.53*
	Video	25	30.80	7.52	
Beginning II	Audio	15	24.80	6.13	3.00*
	Video	15	35.07	11.76	
Intermediate	Audio	42	32.91	7.26	3.41*
	Video	42	38.40	7.31	
Advanced	Audio	7	40.14	1.13	**
	Video	7	39.57	1.59	

* $p < .01$
** No t-test was performed for these data due to the poor reliability of the listening test with these students.

significant difference [t (48) = 3.53, $p < .001$] favoring the videotape group ($\bar{X}$ = 30.80) over the audiotape groups ($\bar{X}$ = 21.12). Results of the t-test for the Beginning II groups showed a significant difference [t (28) = 3.00, $p < .01$] also favoring the videotape group ($\bar{X}$ = 35.07) over the audiotape group ($\bar{X}$ = 24.80). Differences between the treatment group means for the Intermediate level students were also statistically significant [t (80) = 3.42, $p < .01$] favoring the videotape subjects ($\bar{X}$ = 38.40) over the audiotape subjects ($\bar{X}$ = 32.91).

The t-test was not performed for the data obtained from the Advanced groups since an item analysis revealed no discrimination and an extremely low reliability coefficient. This was due to the fact that the listening test was too easy for the Advanced students, most of whom had spent two years in a Spanish-speaking country and, therefore, were able to answer almost all questions correctly regardless of the treatment level.

Summary and Discussion

The purpose of this study was to provide a partial test of the hypothesis that the inclusion of a visual adjunct to listening comprehension tests would allow students to see the totality of natural communication between native Spanish speakers including verbal and nonverbal cues (facial expressions, hand gestures and body movements) and consequently allow them to score significantly higher on a test of listening comprehension than students of equal language proficiency who receive the verbal

cues only. It would appear from the data presented in Table 2 that the visual stimuli of the dialogs, restored by the videotape procedure, made a significant contribution to the comprehension for students in the Beginning I, Beginning II and Intermediate levels. It can be theorized that such results were obtained because the videotape presentation contained a greater quantity of stimuli contributing to the redundancy of the language, thereby making it easier for the students to understand. The subjects in the videotape groups actually had more stimuli with which to interpret the message being conveyed, helping it to appear more like real conversation.

Follow-up interviews held with some of the participating students indicated that there may have been a higher interest level and greater motivation to pay attention among students receiving the videotape presentation. This may have resulted in increased involvement with the subject matter, simply because they could see a television picture. This would suppport the view that one would expect the presentation of foreign language listening tests by videotpae to be more verisimilar and to involve the students more than the presentation of the same material by audio-tape.

A careful examination of the instrument's reliability coefficients presented in Table 1 will reveal that the test discriminated equally well for both audio and video modes of presentation. Thus it could be argued by some that foreign language teachers should not have to go to the added expense and trouble to provide the visual adjunct when an audio version of the test will discriminate equally well. One must be careful to ensure, when concerned solely with discrimination indices in testing, that the intent is merely to rank students rather than assess their progress in skill development. Also, it must be reemphasized that with the exception of listening to the radio or talking on the telephone, there are few real-life communication situations in which the listener is unable to see the speaker. For this reason, most audiotape presentations introduce a greater degree of artificiality for second language learners because they cannot see the totality of cues that provide for complete understanding. Hence on tests of listening comprehenison, audiotape presentations would provide an erroneous measure of what the student might have understood in a real-life situation. If the goal of foreign language instruction is to develop as much as possible a real-life communicative ability in each student, then there is plausible evidence to argue in favor of the visual adjunct to listening comprehension tests.

If it is true, as it appears to be, that students do understand more of the conversation when presented via videotape than by audiotape, then an added bonus will be that the students will feel a greater degree of success in learning a foreign language and an increased desire to further develop their capacity to understand conversational speech.

Notes

1 Lucile Ducroquet, "Of the Importance of the Visual Element in Listening Comprehension Testing in a Foreign Language Context," Audio Visual Language Journal, 15 (1977-78), 251-53.
2 Ibid. p. 251.
3 Gilbert A. Jarvis, "Systematic Preparation of the Multiple-Choice Listening Test," NALLD Journal, 5 (1970), 18-25.
4 Ibid. p. 19.
5 Ibid.
6 Wilga M. Rivers, "Listening Comprehension," The Modern Language Journal, 50 (1966), 196-204.
7 Ibid. p. 201.
8 Jarvis, op cit.
9 Ibid. p. 19, (italics added).
10 William M. Stallings, "A Comparison of Television and Audio Presentations of the MLA French Listening Examination," The Journal of Educational Research, 65 (1972), 472-474.
11 Ibid. p. 11.
12 Stallings indicates that, among other problems, on several occasions technical difficulties interfered with obtaining a suitable videotape image.
13 Gordon L. Jackson, "The Effects of Video vs. Audiotape Interviews on Listening Comprehension in Third-Quarter, Beginning College French," Unpublished Ph.D. dissertation, The Ohio State University, 1979.
14 Prior to their recording, the dialogs were written in rough draft form and then revised by two native Spanish-speakers to produce a natural-sounding conversation. The conversations were then enacted in a natural way (without the scripts being memorized), and audiotaped. Next, a written transcript of the conversations was prepared from the audiotape and was used for rehearsing the dialogs. The "actors" were instructed not to memorize the scripts, but instead to use them merely as a guide. This was done to ensure spontaneity of natural speech with its concomitant hems, haws, gestures and facial expressions.